

# DISTRIBUTION OF GAMOCHAETA (ASTERACEAE: GNAPHALIEAE) IN TEXAS, OKLAHOMA, ARKANSAS, AND LOUISIANA

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## ABSTRACT

Distributions of seven species of *Gamochaeta* are mapped at county level in Texas, Oklahoma, Arkansas, and Louisiana: *G. antillana*, *G. argyrinea*, *G. calviceps*, *G. chionesthes*, *G. coarctata*, *G. pennsylvanica*, and *G. purpurea*. *Gamochaeta purpurea* is the only species known from pre-1900 collections. *Gamochaeta coarctata* and *G. chionesthes* are known only from collections made after 1967; the latter apparently is spreading rapidly but has not reached Texas and Oklahoma.

## RESUMEN

Se cartografía la distribución de siete especies de *Gamochaeta* a nivel de condado en Texas, Oklahoma, Arkansas, y Louisiana: *G. antillana*, *G. argyrinea*, *G. calviceps*, *G. chionesthes*, *G. coarctata*, *G. pennsylvanica*, y *G. purpurea*. *Gamochaeta purpurea* es la única especie conocida de colecciones anteriores a 1900. *Gamochaeta coarctata* y *G. chionesthes* son conocidas sólo de colecciones realizadas después de 1967; la última se está extendiendo aparentemente con rapidez pero no ha alcanzado Texas y Oklahoma.

Species of *Gamochaeta* Wedd. (cudweeds) are common colonizers of roadsides and other disturbed sites in the eastern United States, especially in the Southeast. While several of the species may be native to North America, others probably are native to South America and Central America and recently adventive in our area, rapidly increasing their range (Nesom 2004a, 2004b). In fact, the ubiquity of most of them, within the bounds of their range, is remarkable. The present study details geographic distributions in Texas, Oklahoma, Arkansas, and Louisiana, where most cudweeds are at the eastern or southeastern extremity of their North American range.

Symbols in the maps for Texas, Oklahoma, and Arkansas indicate the date of earliest collection in a county and suggest when the species may have arrived in a local region. Three time classes are recognized: pre-1941, 1941–1950, and post-1950. Collections have been studied from BRIT-SMU, LSU, NLU, OKL, TENN, TEX-LL, UARK, and VDB. Descriptions of *Gamochaeta* species and a key are provided in the recent FNA overview of the genus (Nesom 2006). County distributions in the following paragraphs refer to Texas.

### ***Gamochaeta antillana*** (Urb.) Anderb. (**Fig. 1**).

1903–1940 Denton, Galveston, Hidalgo, Travis counties.

1941–1950 Burnet, Hardin, Kenedy, Leon, Palo Pinto, Robertson, San Patricio, Smith counties.

### ***Gamochaeta argyrinea*** Nesom (**Fig. 2**).

The only known collections from Kansas and Missouri are mapped in Fig. 2 (see Nesom 2004a). The apparent sharp distributional boundary suggests that a correspondingly sharp ecological limiting factor exists.

1905–1940 Austin, Bastrop, Chambers, Grayson, Hardin, Henderson, Jefferson, Liberty, Polk, Trinity, Walker counties. Older collections were made from near the coast, suggesting that the species may have been spreading northward.

1941–1950 Brazos, Camp, Cass, Delta, Fayette, Harris, Hopkins, Jasper, Montgomery, Newton, Orange, Panola, Robertson, Sabine, Shelby, Smith Titus, Van Zandt, Wood counties.

### ***Gamochaeta calviceps*** (Fern.) Cabrera (**Fig. 3**).

1931–1940 Houston, Van Zandt, Walker counties.

1941–1950 Fannin Co.

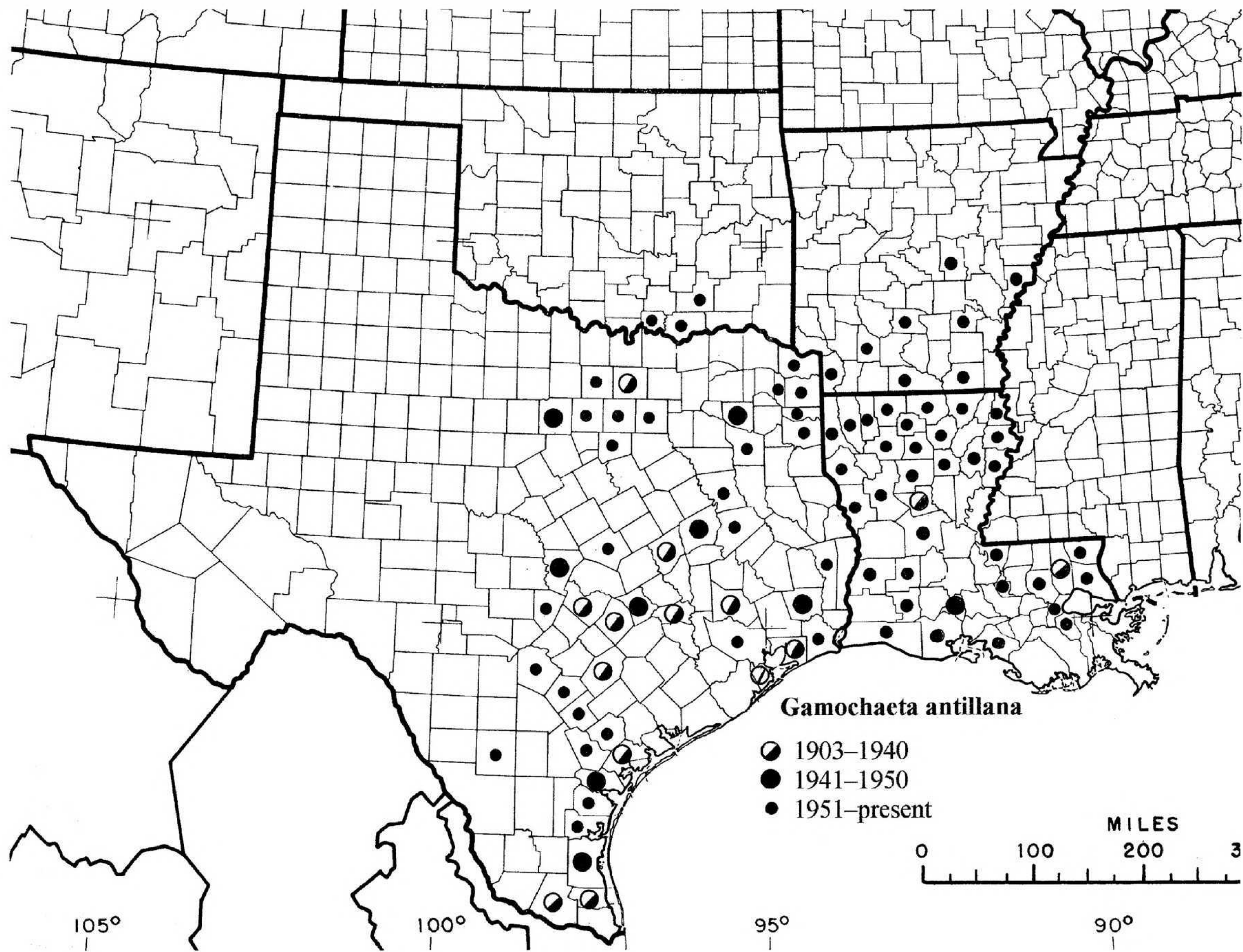


FIG. 1. Distribution of *Gamochaeta antillana* in Texas, Oklahoma, Arkansas, and Louisiana.

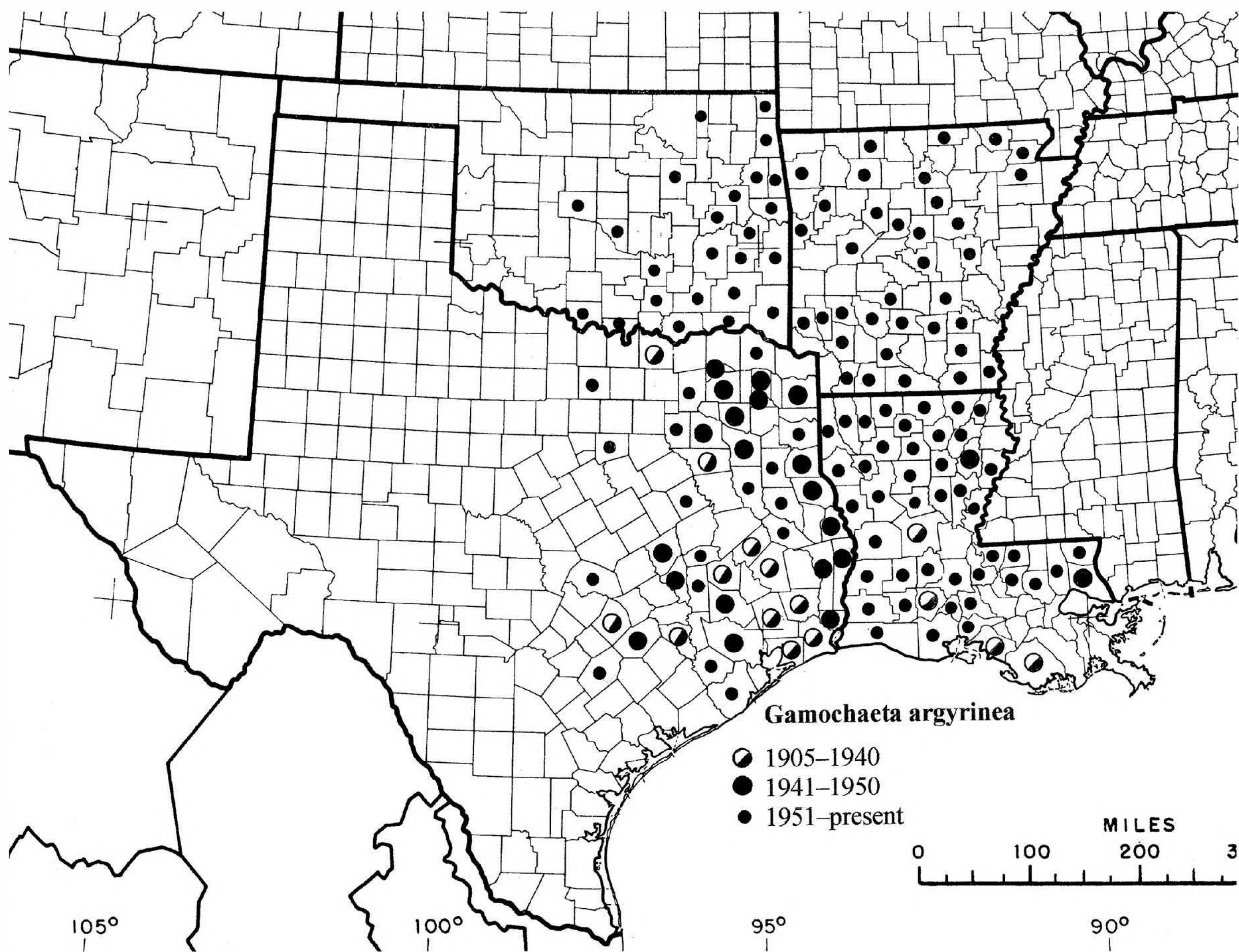


FIG. 2. Distribution of *Gamochaeta argyrinea* in Texas, Oklahoma, Arkansas, and Louisiana. The only known collections from Kansas and Missouri also are mapped.

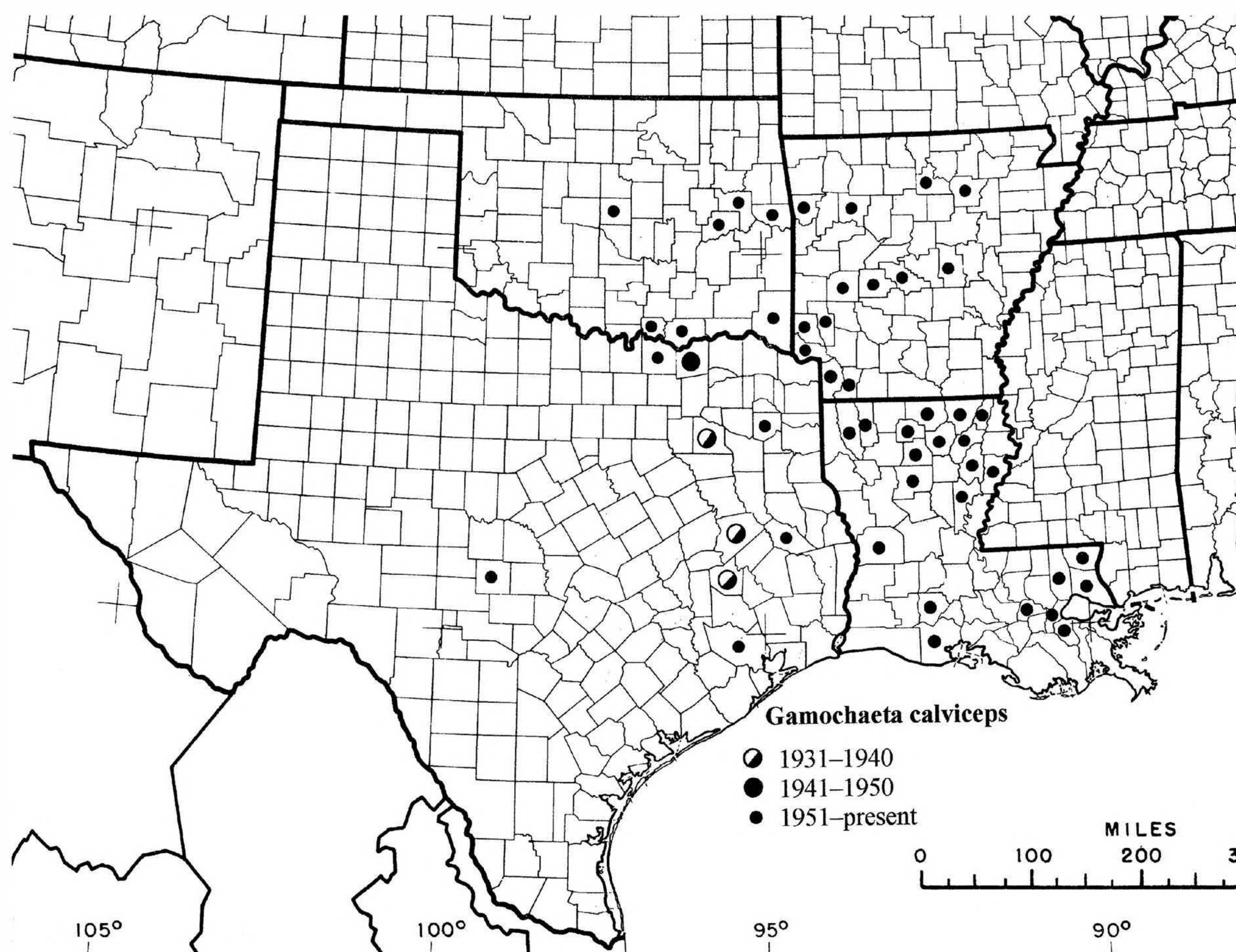


FIG. 3. Distribution of *Gamochaeta calviceps* in Texas, Oklahoma, Arkansas, and Louisiana.

#### ***Gamochaeta chionesthes* Nesom (Fig. 4).**

This species is known by relatively few collections from north-central Louisiana and south-central Arkansas, the earliest made in 1968. Of all known collections from over its North American range, the earliest was made in Florida in 1957 (Nesom 2004a for citations). It appears to be rapidly expanding in range.

In the original description, *Gamochaeta chionesthes* was known in Arkansas and Louisiana only from three collections. Others are cited here.

**ARKANSAS. Calhoun Co.:** clearcut pine woods beside Ark. 160 ca. 2 mi from the Bradley Co. line and 5 mi SE of Harrell, 19 May 1993, *Thomas* 133,914 (NLU). **Cleveland Co.:** Greenwood Cemetery E of US 79 and SW of Ark 35 at Rison, 19 May 1993, *Thomas* 133,983 (UARK). **Grant Co.:** Brush Creek Cemetery beside Ark. 222 W of Ark. 229 N of Leola and 1.9 mi E of Hot Spring Co. line, 12 May 1996, *Thomas* 149,010 (NLU). **Hot Spring Co.:** Malvern P.O., Magnet Cove, rocky ridges, 600 ft, 24 Apr 1973, *Demaree* 66292 (MO). **Perry Co.:** Hwy 247 on north Cove Mountain, 1.5 mi N of jct with Hwy 155, 13 air mi SE of Russellville, [mixed with *G. purpurea*], 30 Apr 2003, *Nunn* 7680 (UARK). **LOUISIANA. Bienville Par.:** clearcut pine woods W of La. 154 at Bonnie and Clyde Historical Marker on W side of La. 154, 3 mi S of La. 793 and Pleasant Hill Church SW of Mt. Lebanon, 17 Jun 1987, *Thomas* 100,399 (NLU). **Claiborne Par.:** roadbank of La. 520 in Kisatchie Natl. Forest, 7 mi from Homer, 13 Apr 1975, *Thomas* 43,230 (NLU); Hurricane Church in town of Hurricane, on La. 159 SE of Athens, 21 Apr 1977, *Lewis* 345 (NLU). **Grant Par.:** Camp Beauregard, near jct of Mayflower and Tank Trail, 2.1 km NW of S end of Twin Lake, 7 km W of Flagon Bayou, upland longleaf pine forest, 8 Apr 2002, *Douglas & Hastings* 8 (LSU); Camp Beauregard, N of Mayhaw Road, upland longleaf pine forest, 22 Apr 1993, *McInnis* 4240 (LSU). **LaSalle Par.:** Tullos, 1/2 mi S of jct US 165 and US 84, under telephone line, 16 May 1968, *Haan, Fife, et al.* 139 (TENN). **Lincoln Par.:** Woodlawn Park in eastern Ruston, roadside of La. Hwy 146, 12 May 1985, *David* 128 (LSU); [Ruston], Illinois Central Railway right of way, clay soil, 3 May 1984, *Wise* 39 (DOV). **Natchitoches Par.:** W of Natchitoches near jct of Interstate Hwy 49 and La Hwy 6, hard-packed sandy soil in front of gas station complex, past flower and fruit, 5 Jul 2004, *Nesom* GA04--63 (BRIT); gas line along paved road S of Goldonna, 22 Apr 1977, *Thomas* 51,639 (NLU). **Tangipahoa Par.:** beside La. 10 between Wilmer and Washington Par. line, 9 May 1970, *Thomas* 18,589 (NLU); roadbank of Interstate 55, 2 mi S of Fluker exit (La. 10), 29 Apr 1979, *Thomas* 64,021 (NLU). **Union Par.:** hills 3 mi NW of Spencer, hills, 10 May 1969, *Thomas* 13, 471 (NLU, on sheet with *G. purpurea* and *G. argyrinea*).

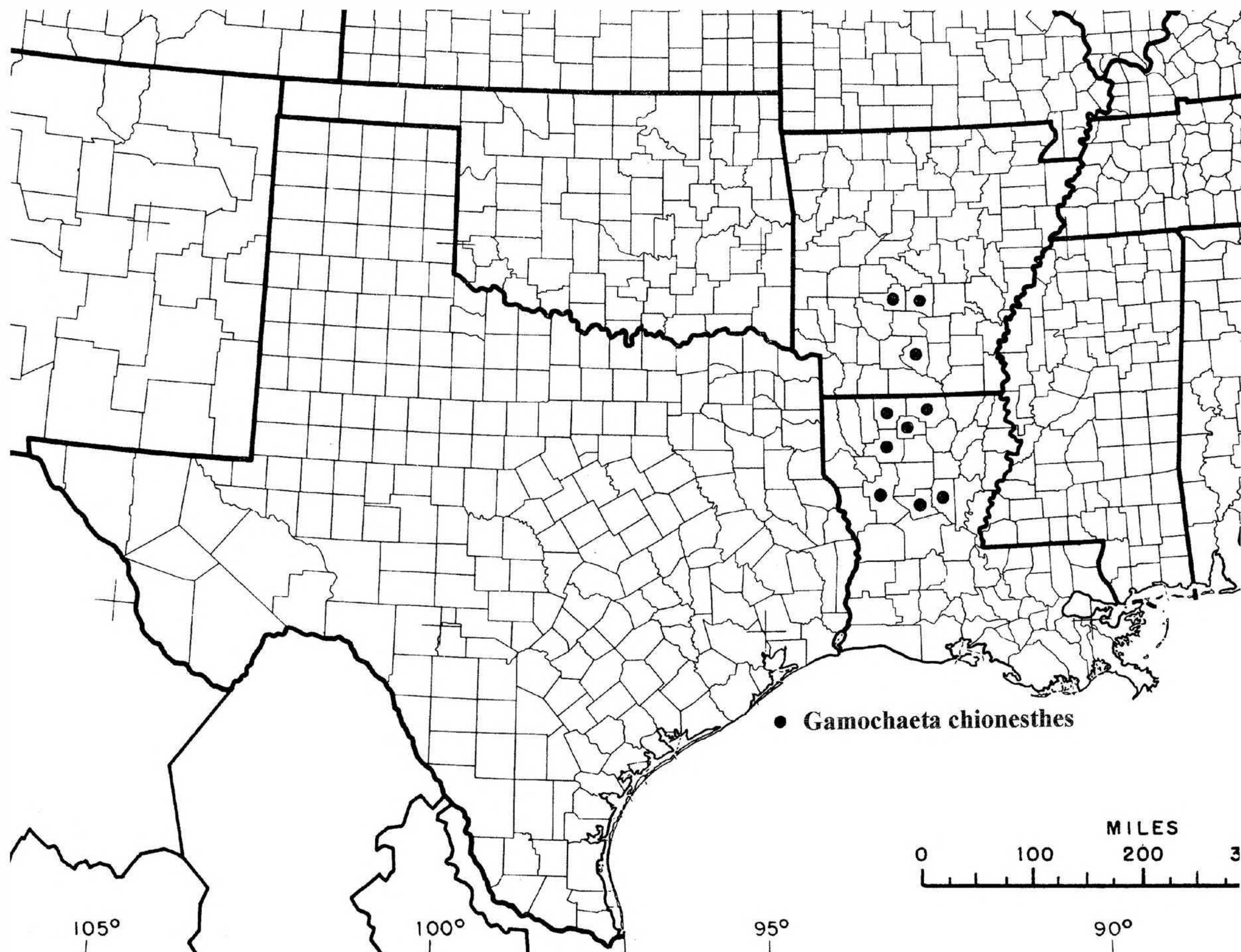


FIG. 4. Distribution of *Gamochaeta chionesthes* in Arkansas and Louisiana. All collections made after 1967.

***Gamochaeta coarctata* (Willd.) Kerg. (Fig. 5).**

The earliest Texas collection of this species was made in 1969. The earliest in Louisiana were made in 1970. The earliest known North American collections were made in 1949 and 1950 in the vicinity of Wilmington, North Carolina (see Nesom 2004b).

***Gamochaeta pensylvanica* (Willd.) Cabrera (Fig. 6).**

1903–1940 Bastrop, Bell, Burleson, Cameron, Galveston, Goliad, Gonzales, Harris, Kleberg, Llano, Nacogdoches, Travis, Waller, Washington counties.

1941–1950 Aransas, Brazos, Denton, Erath, Hardin, Hidalgo, Jack, Jim Wells, Lee, Leon, Robertson, Somervell, Tarrant counties.

Eight collections of *Gamochaeta pensylvanica* from Louisiana (7 parishes) were made prior to 1922. One collection was made before 1900 (New Orleans, Coliseum Street, 31 Mar 1871, *Dr. Joor s.n.* LSU).

***Gamochaeta purpurea* (L.) Cabrera (Fig. 7).**

*Gamochaeta purpurea* has the widest distribution of the cudweed species occurring in North America, and it is known from the earliest collections. It is the only one of the Texas species collected prior to 1900.

1843 Harris Co. (probably), collected by Lindheimer.

1890 [ca.] Dallas Co., collected by Reverchon.

1905–1940 Burnet, Calhoun, Erath, Jefferson, Llano, Washington, Wilson counties.

1941–1950 Bastrop, Brazos, Cass, Denton, Franklin, Grayson, Hardin, Harrison, Jefferson, Red River, Smith, Tarrant, Titus, Van Zandt counties.

A “race” of *Gamochaeta purpurea* apparently occurs in east-central Louisiana: Caldwell, Franklin, Pointe Coupee, St. Helena, and West Feliciana parishes (LSU). The plants have densely leafy stems, densely brac-

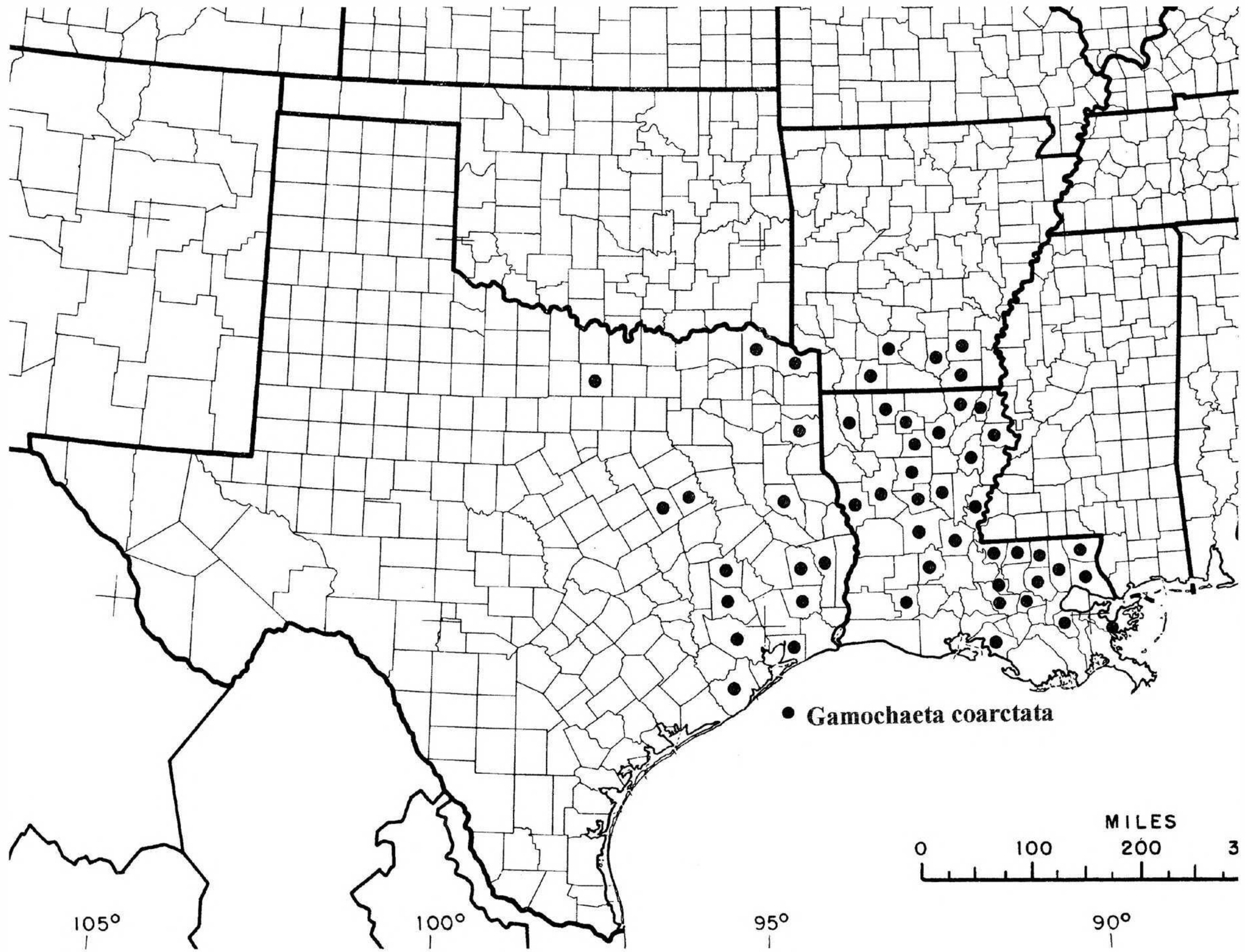


FIG. 5. Distribution of *Gamochaeta coarctata* in Texas, Arkansas, and Louisiana. All collections made after 1967.

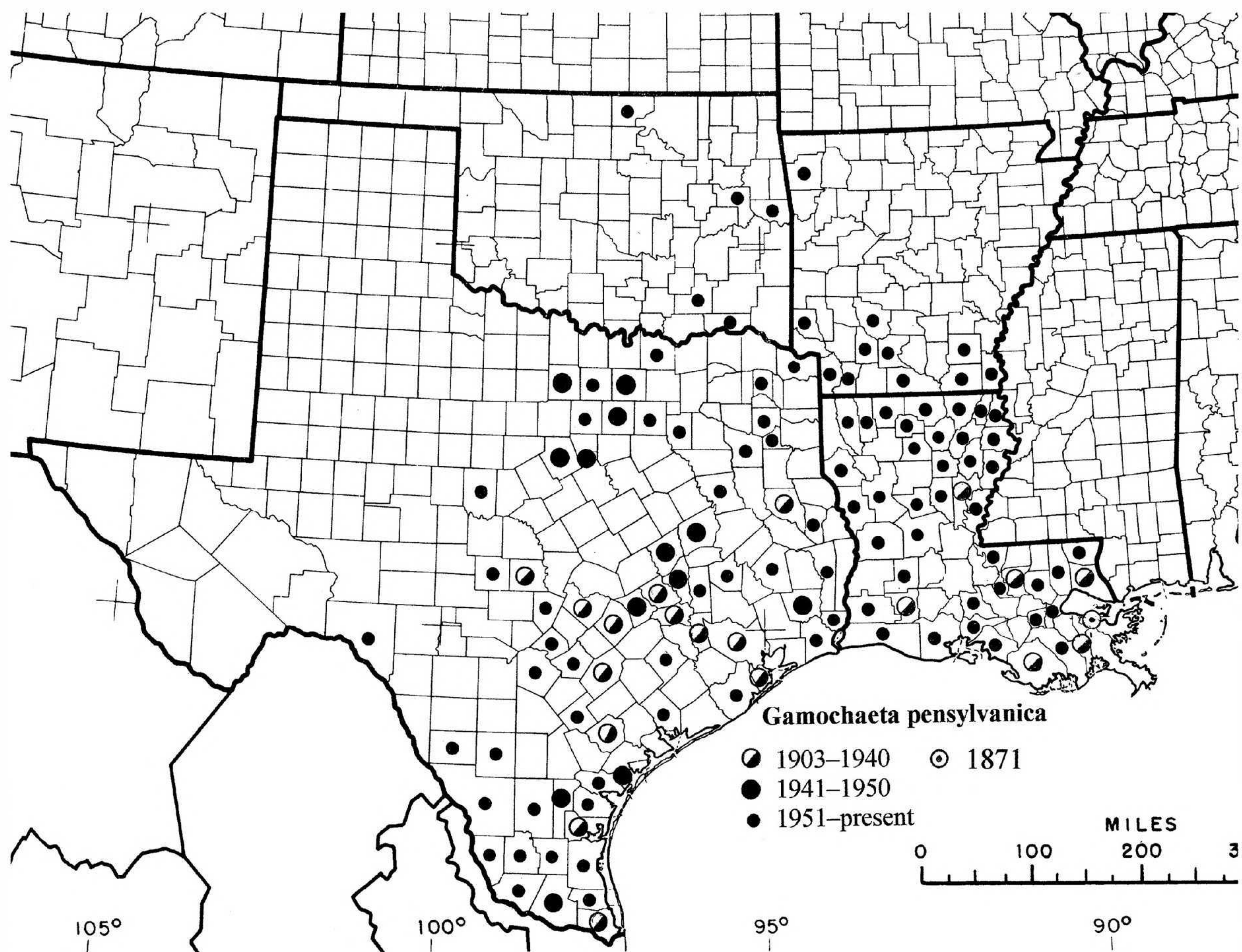


FIG. 6. Distribution of *Gamochaeta pensylvanica* in Texas, Oklahoma, Arkansas, and Louisiana.

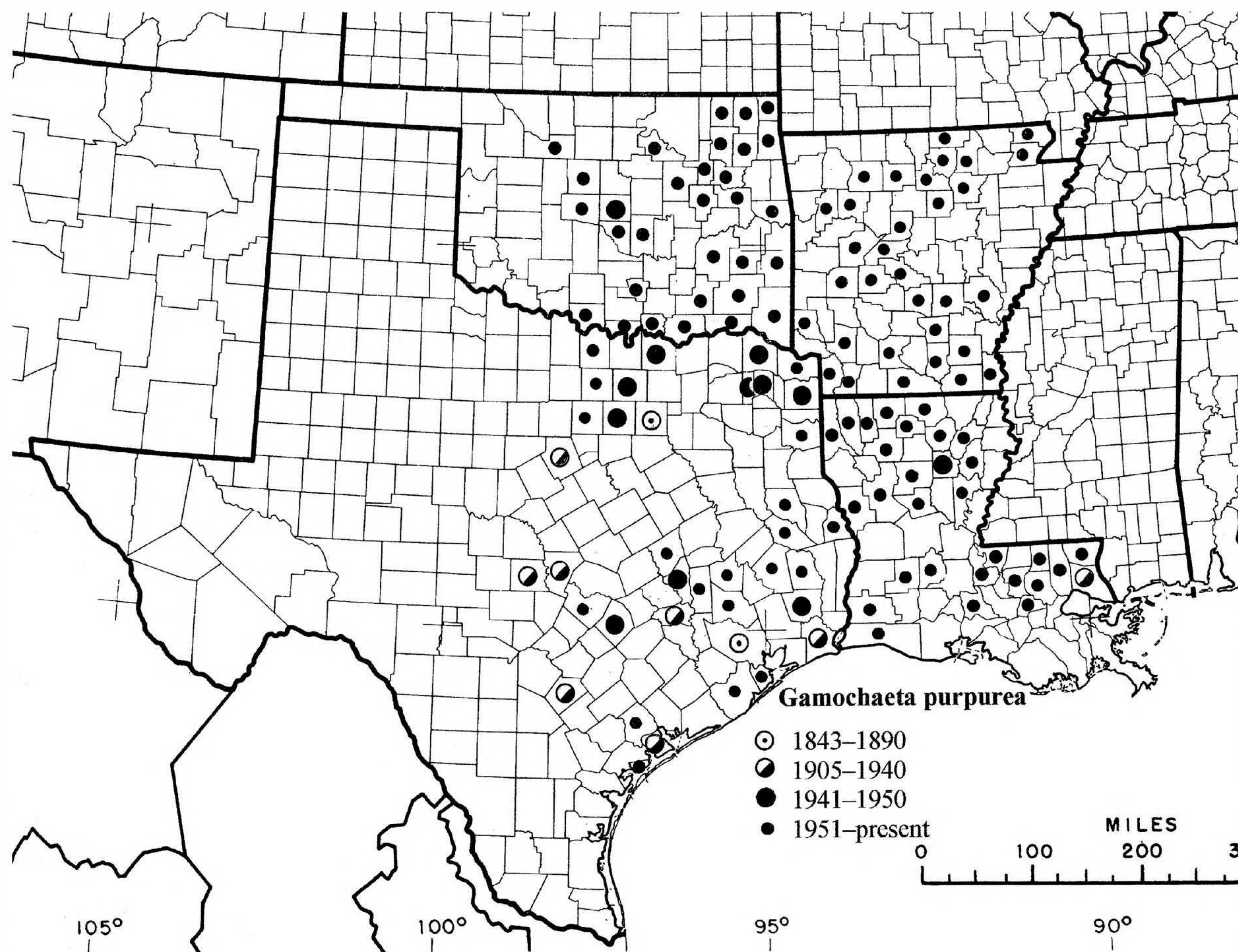


FIG. 7. Distribution of *Gamochaeta purpurea* in Texas, Oklahoma, Arkansas, and Louisiana.

teate capitulescences, abaxial leaf surfaces hirsute-pilose with hairs with prominently (atypically) swollen bases, and a tendency toward perenniality.

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